formed, despite the greatest care, on the most prominent points of pressure. By the end of August the wound had contracted to the size of a No. 10 catheter, and the child's condition was improving daily. The mother then took her home, and I did not see her again until October 5, when she brought her to see me—or to be seen of me. I found the wound *firmly* and *evenly* united, the child was in all respects in good health, the sores on the back had all healed and scarcely left a mark. When tested as to the powers of deglutition and of swallowing solids and fluids, I found she could do both very well, but her mother told me that sometimes fluids regurgitated through the nose. The child had a more healthy look than she had when I first saw her, which was when the foreign body had been lodged in the pharynx for *three months*.

ABNORMAL FRANGIBILITY AND DELAYED AND NON-UNION OF FRACTURES OF THE LONG BONES IN PERSONS SUFFERING FROM GENERAL PARESIS OF THE INSANE.

BY JOHN HARVEY GIRDNER, A.B.M.D.,

OF NEW YORK.

AUTHORS of text books which treat of fractures of the long bones invariably divide the causes of delayed union and of non-union of these fractures into two heads, viz., constitutional and local. They have with equal uniformity failed to include among the constitutional causes what I have found to be a most important one, viz.: *General paresis of the insane*. This fact is not surprising, nor are the authors to be censured for this omission, when it is remembered that it is only within the last ten to fifteen years, that general paresis has been recognized as a distinct and peculiar form of disease of the brain and nervous system, with a perfectly characteristic history and pathology. Doubtless an even more potent reason for this seeming neglect is the fact that, men interested in

surgery and accustomed to study diseases and injuries from a surgeon's standpoint, rarely have the opportunity to observe a large number of cases of general paresis for any considerable length of time; cases of this kind are generally inmates of asylums for the insane, and such surgical aid as they require, or receive, is at the hands of the gentlemen composing the medical staffs of those institutions, who are specialists in psychology, hence have no interest in any surgical peculiarities which the disease may present.

My attention was attracted to this subject during two years and a half service as assistant physician to an asylum for the insane, in which there were about seventeen hundred adult male inmates. There were certain wards set apart as a general hospital, for the separate treatment of the physical diseases and injuries of these insane men, and I was in charge of this department. As is well known, one of the symptoms of general paresis is a gradual and slowly advancing paralysis of all the muscles of the body. As the muscles of locomotion become affected, these patients are subject to frequent falls, and in this way, the percentage of fractures is greater among them than among men in any other circumstances; and further, I am satisfied that a far less degree of force will produce a fracture in a paretic than would be required to cause the same injury in a person in ordinary health. This disease which expresses itself in the muscular system by partial paralysis, indicates its presence in the osseous system by an unnatural frangibility. Not only are patients suffering from general paresis, greatly predisposed to fractures; but to greatly delayed union, soft fibrous union, or more frequently, complete non-union is the rule and osseous union the exception.

It might be said that the difficulties to be overcome in placing the fragments in position, and keeping them there, are greater where the patient's mental condition is such as to render him unable to cooperate with the surgeon in his efforts to make a perfect limb. This is true to a certain extent; but it is not so important a factor in treating fractures in insane patients as one unacquainted with this class would be likely to suppose, and besides, I found this very class—general paretics

—more manageable under these circumstances than patients with most of the other forms of insanity. No further evidence is needed to show that it is the disease itself, and not lack of coöperation on the part of the patient, when I say that I was always able to obtain bony union, and generally made useful limbs, when the patients suffered from any of the other forms of insanity, such as acute or chronic mania, etc., etc., in nearly all of which, it is more difficult to properly adjust and immobilize the fragments, owing to the restlessness of the patient, than in cases of general paresis.

General paresis is frequently insidious in its attack, and the pathological changes may advance for months and years before the nature of the disease is recognized, or the mind become sufficiently affected to make it necessary to remove the patient to an institution for the insane. Especially is this the case when the fibrous degeneration begins in the spinal cord and lower ganglia of the brain, It is during this period, that the surgeon, called upon to treat a fracture in such a case, may be greatly puzzled to explain the cause of non-union in the absence of any apparent cause and be unjustly censured for a result which he could in no way avert. In all cases of non-union of fractures in adult male patients, surgeons should always examine carefully for the earlier symptoms of general paresis and bear in mind, that in such cases, non union or soft fibrous union is the rule, and firm bony union the rare exception.